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THE ESTIMATION OF STRYCHNINE IN NUX VOMICA BY THE NITRIC ACID PROCESS.

By M. H. Webster and R. C. Pursel.

Since Gerock first isolated strychnine from the total alkaloids of nux vomica by nitrating the brucine, numerous methods have been suggested whereby the alkaloidal nature of the brucine may be totally destroyed without affecting the strychnine. Divergent opinions on the accuracy of the various processes have been expressed and much controversy has ensued.

The adoption in the U.S.P. 1900 of Gordin's modification of the Keller process has but served to stimulate such discussion until there is at present no more interesting and, in view of the strict rulings of the Food and Drug Commission, no more important question before the pharmaceutical chemist than the determination of strychnine in nux vomica.

In Gerock's[1] process the total alkaloids are converted into picrates and treated with dilute nitric acid. This destroys the brucine picrate, leaving unaltered the strychnine salt which is collected and weighed.

Nagelvoort[2] has found a modification of this process to give satisfactory results at low temperatures.

Keller[3] discards the preliminary conversion of the alkaloids into picrates, 1 c.c. of nitric acid (1.42) is added to a solution of (approximately) 0·3 gramme of total alkaloids in 10 c.c. H_2SO_4 10 per cent.;

[1] *Arch. d. Phar.*, 1889, p. 159.
[2] *Proc. A. Ph. A.*, 1893, p. 165.
[3] *Zeit Oest. Apoth.-Ver.*, 1893, 587.

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at the end of 1½ hours the liquid is made alkaline with ammonia, and shaken out by means of chloroform.

Howard[1] found Keller's process accurate if conducted at 10° C. While endorsing his (Howard's) opinion, Reynolds and Sutcliffe[2] call attention to the influence of nitrous acid on the oxidation of the brucine, and recommend that the decomposition be stopped immediately the nitration of the brucine is completed.

Gordin[3] indisputably proved that in carrying out Keller's process partial oxidation of the strychnine occurs. In Gordin's process (now official) the total alkaloids from 10 c.c. fluid extract are dissolved in 15 c.c. of H_2SO_4 3 per cent. After cooling, 3 c.c. of a mixture of nitric acid and water (equal volumes) is added and at the end of 10 minutes the solution is made alkaline and shaken out with chloroform.

Lenton[4] obtained erratic results with Gordin's process and considers it not comparable with the ferrocyanide process. Farr and Wright[5] operated on 0.084 gramme brucine by Gordin's process and recovered 0.0767 gramme alkaloid (91.3 per cent.). They suggest warming the solution of alkaloids to 122° F. before adding the nitric acid mixture.

Operating on 10 c.c. of a fluid extract by the U.S.P. process, we extracted the total alkaloids in the usual way, and dissolved them in 15 c.c. 3 per cent. sulphuric acid. On adding the 3 c.c. of nitric acid mixture, as directed, no change in color took place and, at the end of 10 minutes, the mixture was only faintly straw-colored. Proceeding with the process, we obtained 0.171 gramme of alkaloid by titration. From this neutral solution the alkaloid was again extracted secundum artem, and dissolved as before in 15 c.c. 3 per cent. sulphuric acid, 3 c.c. of nitric acid mixture was added, and at the end of 10 minutes the mixture, now slightly yellow in color, yielded 0.157 gramme alkaloid.

For experimental purposes the total alkaloids were extracted from 100 c.c. of the fluid extract by the U.S.P. method, and dissolved in weak sulphuric acid. Three aliquot portions, each representing

[1] *Analyst*, 1905 (30), 261.
[2] *Phar. Jour.*, Vol. 76, p. 555.
[3] *Proc. A. Ph. A.*, 1902, p. 336.
[4] *Phar. Jour.*, Vol. 75, p. 864.
[5] *The Chemist and Drug.*, July 28, 1906.

10 c.c. of fluid extract, yielded, after nitration by the official method, 0·167 gramme, 0·109 gramme, 0·118 gramme respectively of alkaloid reckoned as strychnine—results somewhat discouraging.

EXPERIMENTS WITH PURE ALKALOIDS.

We tried the process on pure alkaloids and obtained the following results:—

	Temp.	Time.	Alkaloid Recovered.
Brucine, 0·145 gm.	85° F.	10 min.	0·135 gm.
Strychnine, 0·098 gm.	86° F.	10 min.	0·098 gm.
Brucine, 0·127 gm.	83° F.	2 hours.	0·1174 gm.

Recently the experiments were repeated, using the same process, with results as follows:—

	Temp.	Time.	Alkaloid Recovered.
Brucine, 0·131	73° F.	10 min.	none.
Brucine, 0·122	73° F.	10 min.	none.

The results were decidedly interesting; while previously we were prepared to agree with those who considered the process faulty, these latter experiments seemingly justified all the claims of its author. Anyway we set out to discover, if possible, the unknown conditions which modified the action of the nitric acid on the brucine.

Gordin's process presumably depends upon the nitration of the brucine when the total alkaloids are dissolved in an acid solution consisting of 10 per cent. U.S.P. nitric acid (by volume) and 3 per cent. sulphuric acid (by weight). It was found that 0·1 gramme of brucine dissolved in 15 c.c. of such a mixture (using acids strictly pure) yielded a water-white solution which remained colorless during 48 hours at ordinary temperatures.

A solution of pure brucine was prepared which contained 0.1 gramme of the alkaloid in 15 c.c. sulphuric acid 3 per cent., and to different portions of 15 c.c., 3 c.c. of the nitric acid mixture (HNO_3 1 vol., water 1 vol.) was "added" in the following various ways:—

Experiment (*a*). The nitric mixture was allowed to trickle gently down the side of the beaker containing the solution of brucine, and remain as a separate layer at the bottom. In about 30 seconds this layer became pink, then gradually red. At the end of two minutes the beaker was rotated.

Result: Bright-red mixture giving at the end of ten minutes no reactions for alkaloids.

Experiment (*b*). The solution of brucine was rotated while the nitric acid mixture was being added, so as to thoroughly mix the acids immediately on coming in contact.

Result: Water-white mixture which had a faint yellow tinge after 24 hours.

Brucine recovered at end of that time 0·91 gramme, *i. e.*, 91 per cent.

Experiment (*c*). The nitric acid mixture was added in a haphazard manner and beaker rotated as directed in the official process.

Results: Various, usually the mixture remained colorless, sometimes it became red.

Farr and Wright suggested heating the solution of alkaloids to 122° F. before adding the nitric acid. Accordingly these experiments were repeated at that temperature.

The results were the same as before; experiment (*a*) gave a red liquid; (*b*), a colorless mixture which remained so over night, and (*c*) a mixture red or colorless, as luck would have it.

The foregoing experiments were repeated, using different samples of nitric acid; those containing traces of hyponitric acid affected the brucine much more readily than an acid strictly pure.

Kebler and Hoover found traces of this impurity in two out of four samples of C.P. nitric acid they examined.[9]

Besides the various methods of adding the nitric acid, the absence, or varying proportion, if present, of the lower oxides of nitrogen may possibly account for the astonishing lack of uniformity in the results of different operators. The presence of the lower oxides of nitrogen in nitric acid, either as an impurity or as the first product of the reaction, is often necessary to ***start*** the nitration of organic compounds. In the experiment (*a*) by allowing the strong nitric acid to remain in contact with the brucine solution this desideratum is obtained. It seemed reasonable to infer from this, that if the preliminary reduction of the nitric acid were prevented, the production of di-nitro-brucine would not take place. Accordingly a few drops of hydrogen peroxide solution were added to a portion of the acid solution of brucine, and the strong nitric acid mixture was trickled

[9] U. S. Dept. of Agriculture, Bureau of Chemistry, *Bulletin* 99, page 191.

down the side of the beaker. It formed a distinct colorless layer at the bottom which showed no trace of color in several hours.

To another portion of the brucine solution 1 c.c. of a solution of sodium nitrite was added. A reddish tint developed slowly, since, as pointed out by Lunge,[10] pure nitrous acid does not affect brucine. A few drops of solution of hydrogen peroxide added to the above mixture produced a bright-red color immediately by partially oxidizing the nitrous acid into nitric acid and other oxides of nitrogen.

From these reactions we concluded that the most suitable reagent for nitrating the brucine would be nitric acid containing a fair proportion of the lower oxides of nitrogen in solution.

We therefore modified the U.S.P. process by substituting fuming nitric acid (commercial nitrous acid S.G. 1·42) for the U.S.P. nitric acid (S.G. 1·40) and extending the period of contact to 30 minutes in order to insure destruction of the whole of the brucine at various temperatures. The results were as follows:—

	Temp.	Time.	Alkaloid Recovered.
Brucine, 0·196 gm	60° F.	30 min.	none.
Strychnine, 0·0963	93° F.	30 "	0·09628
Mixture { Brucine, 0·20 . . . . Strychnine, 0·0942 . }	87° F.	20 "	0·0941

Inasmuch, however, as commercial nitrous acid is unstable and of varying composition, we considered it desirable to discard its use in favor of U.S.P. nitric acid and sodium nitrite. By these reagents the following results were obtained with pure alkaloids:—

	Temp.	Time.	Alkaloid Recovered.
Brucine, 0·203 gm.	60° F.	20 min.	None.
Brucine, 0·198 gm.	63° F.	20 "	"
Strychnine, 0·123 gm.	90° F.	30 "	0·1229
Mixed { Brucine, 0·134 gm. . . . Strychnine, 0·112 gm. }	65° F.	20 "	0·1118
Mixed { Brucine, 0 152 gms. . Strychnine, 0·091 gm . }	90° F.	30 "	0·091

These results show that the U.S.P. process modified in this way is accurate over a wide range of temperature when pure alkaloids are employed. It has been observed that any impurity in the mixture of total alkaloids from nux vomica has a tendency to retard the nitration of the brucine. Again if, as has been suggested, there is a

[10] *Ztschr. f. angew. Chem.*, 1902, No. 1.

third alkaloid in nux vomica it may not be a negligible factor so that deductions from experiments with pure alkaloids cannot wholly be applied to the total alkaloids obtained in the usual way.

Different portions of 10 c.c. of the fluid extract (mentioned before) were operated on by the usual method until the total alkaloids were obtained. These were subjected to the process, detailed below, then the alkaloidal residue was extracted and titrated. To overcome the objections to experimenting with unknown quantities of alkaloids, and to thoroughly test the process, the alkaloid was again extracted after the above nitration, subjected a second time to the nitrifying agent under same conditions as before, then extracted and titrated. The results are given below.

	Temp.	Time.	Alkaloid recovered.	Alkaloid obtained on repeating.
1. Alkaloids from 10 c.c. F. E.	65° F.	30 min.	0·1068 gm.	0·1063
2. Alkaloids from 10 c.c. F. E.	90° F.	30 "	0·1066 gm.	0·1054
3. Alkaloids from 10 c.c. F. E.	78° F.	10 "	0·1068 gm.	not repeated.

The process was then applied to the fluid extract of nux vomica without preliminary extraction of the alkaloids, 10 c.c. was evaporated to dryness in a beaker. The resulting extract was dissolved, as far as possible, in 15 c.c. 3 per cent. H_2SO_4 and treated with nitric acid and sodium nitrate in the usual way. At end of 30 minutes the mixture was diluted with 20 c.c. water, run through a pledget of cotton wool, then filtered and followed by wash water. The bull·ed liquid was put in a separator, made alkaline with KOH solution, and extracted by means of chloroform. The alkaloid was obtained in definite crystals having a yellow tinge, but otherwise free from impurity. The titration indicated 0·1072 gramme, which closely agrees with figures above.

Evidently, then, the process is not affected by the purity of the alkaloidal residue. We have already shown that it is applicable over a wide range of temperature, and is not affected by any possible manner of adding the reagents or probable impurity therein. Subsequent use in the routine work of the laboratory justifies these conclusions.

Adding our modifications to the text of the U.S.P., the following gives the process in detail:—

—" dissolve the alkaloidal residue in 15 c.c. of 3 per cent. H_2SO_4. To this solution add 3 c.c. of a mixture of equal volumes of nitric

acid (S.G. 1·4) and distilled water, *then add 1 c.c. of a 5 per cent. solution of sodium nitrite in water*, and, after rotating the liquid a few times, set it aside for exactly *30 minutes*, stirring it gently three times during this interval." The solution is then made alkaline and shaken out with chloroform in the usual way.

91 FULTON STREET, NEW YORK.

THE FOOD AND DRUGS ACT, JUNE 30, 1906, AND ITS EFFECT ON THE COMPOSITION OF MEDICINE.[1]

BY H. W. WILEY.

The food and drugs act introduces for the first time into this country a national control over interstate and foreign commerce in foods and drugs. The importation of foreign drugs is controlled at the ports of entry under an existing law which was first enacted in 1848. This law not having been specially repealed, I believe, under the ordinary construction, remains in full force except in points in which its provisions are in conflict with those of the new inspection law. Just how far the requirements of the new inspection law must be read into the old law is a matter of purely legal character on which I have no opinion. It is evident, therefore, that the application of the act, in so far as drugs are concerned, will be practically to the control of domestic commerce.

Two standards for drugs entering into interstate commerce are specially noted in the act, namely, standards as set forth or indicated in the U.S.P. and the N.F.; second, standards which are placed on the drugs themselves. Under the terms of the act it appears that any drug bearing a name recognized in the U.S.P. or N.F. shall be held to conform in strength and purity to the standards therein established or indicated, whether they are marked U.S.P., N.F., or not. If it is desired that these drugs shall conform to any other than that of the established authorities, this standard must be plainly stated upon the label.

Drugs which are used for technical purposes are evidently not included in this classification, inasmuch as the definition of drugs excludes all chemicals and all drugs ordinarily so used, employed

[1] Read at the Philadelphia Branch of the American Pharmaceutical Association, December 12, 1906.

for technical purposes. This is so clearly brought out in the law itself, it appears to me, as to need no further elucidation, yet some questions have been raised respecting a discrimination. As a mere suggestion I would say that when substances are used both for medicinal and technical purposes, it would be advisable to state upon the label the fact that they are to be used "for technical purposes," when so intended, or to attach some other word so as to show clearly that they are not to be used as drugs. In regard to certain kind of substances, the law presents a double attitude. An illustration of this is in the case of alcoholic products. When these are used as beverages it is not necessary to state upon the label the quantity of alcohol which they contain. If, however, prescribed as remedies or drugs, tonics, or otherwise, the label must bear the required statement.

A question arises here of some importance in regard to these bodies. If the physician prescribes wine as a tonic the patient may purchase this wine either of a liquor dealer or a druggist, and the same is true, for instance, in the case of malt extract which may be sold as indicated above or over the bar. When is an article purchased as above to be considered as a beverage and when a medicine? Here is a question of such nice legal bearings that I am unable to give any opinion. Theoretically any such package should bear the percentage of alcohol therein contained; practically it would be rather difficult to enforce such a regulation.

The most striking feature of the Food and Drugs Act is that relating to the practical exemption from supervision, as to standards, of the so-called proprietary remedies. Just why the U.S.P. and N.F. remedies should be subjected to such a rigid standard and practically the same mixtures be allowed to go uninspected, when in the guise of a patent medicine, is a question of importance. This is no more strange, however, than the laws regulating the practice of medicine and pharmacy. Those who are legitimately engaged in the practice of these professions are required to take a long course in preparatory training and to secure a license after examination before State and Municipal Boards in medicine and pharmacy, and even then they are required to practice their professions under the strict supervision of the law. On the other hand, the quack doctor or the proprietor of a fake remedy may practice medicine through the public press and dispense drugs

in the same manner, through the mails, and with the aid of the express companies, without any medical or pharmaceutical training whatever, without securing any license or paying any fees, or without being subjected to any kind of an inspection, save in the placing of the names of a few drugs upon his labels and to refrain from misrepresentation as stipulated by the Federal Act. In other words, that part of medicine and pharmacy which least needs a supervision of the law is practically the only part which comes under its supervision, while the unspeakable abuses which attend the other branches of remedies go practically unchecked. It is hoped that when amendments are made to the law they will be of a character to at least impose equally rigid inspection upon proprietary remedies. My experience with these remedies is purely of an academic character, but in the last few months I have had presented to me hundreds of labels of proprietary remedies and also the formulas of the articles. The information submitted has brought out many interesting features of which I shall mention only two. A large majority of all of the proprietary remedies are made by manufacturing firms whose names appear nowhere upon the label and who would be, I am sure, heartily ashamed to have them there. Most of these proprietary remedies are compounds of well-known drugs, most of which appear in the U.S.P. or N.F. and doubtless are copies of ordinary prescriptions. That first-class firms should lend their influence or countenance to a thing of this kind is almost incredible.

A few days ago I read a letter of consolation written by a manufacturing firm to a promoter of a great female remedy, so-called, assuring him that the prescription or medicine which this firm manufactures for him will bear every test of the Pure Food and Drugs Act and that he need have no fear in giving his guaranty. In point of fact the guaranty should be given by the manufacturer of the remedy and not simply by the seller and advertiser thereof. The prescription is simple enough and doubtless wholly ethical, but the use to which it is put is something which transgresses every law of ethical propriety, whether it be on the part of the manufacturer who makes the stuff for the profit or on the dealer who advertises it.

There are many other points which naturally present themselves in connection with the drug part of the Food and Drugs Act. I need hardly assure this audience that in so far as the Department of Agriculture is concerned this act will be enforced in the letter of

its terms and the spirit of its purpose, that is, in harmony with the ethical principles of pharmacy and medicine. We shall do all we can to conserve these principles in the drug trade as it passes from State to State, having in view the noble purposes of the two great professions interested, namely, the preparation of pure remedies and the alleviation of suffering and the treatment of diseases. To this end we shall labor to see that the drugs which shall pass from State to State are pure and up to the standard of strength required, and that the proprietary remedies bear the legend which the law requires and that their labels be free from any statement, design or device which is false and misleading in any particular. If this last can be secured in the spirit of the act it seems to me it will put an end forever to the disgraceful condition in which our country now finds itself, flooded, as it is, with remedies for the laity, advertised falsely and reaching, through the public press, every home and hamlet of our country.

FOUR THINGS EVERY DRUGGIST SHOULD KNOW ABOUT HIS BUSINESS.[1]

By Harry B. Mason.

There are four things which every druggist, as a commercial man, should know about his business, but, vital as they are, I fear the majority of druggists are in ignorance of them.

THE FOUR ESSENTIALS.

(1) Every druggist should know his percentage expense of doing business.

(2) He should know his average gross profit, estimated on the total volume of sales.

(3) He should know whether certain important lines or departments, like those involving cigars, candy and soda, are making or losing money for him, and, if they are making money, how much.

(4) He should know for a certainty what his total annual earnings are from the entire business.

Now why is it necessary to know these four things? Because

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[1] Read before the Philadelphia College of Pharmacy, December 18, 1906.

they are absolutely fundamental to the wise and successful conduct of any business. Without such facts at command one is completely in the dark and is in no condition to guide his craft skillfully and well. He is like the physician who attempts to treat a case without first taking the temperature, feeling the pulse, looking at the tongue, examining parts of the body which may be affected, or inquiring as to the patient's symptoms.

The two cases are exactly parallel, and I do not think I need dwell further upon the comparison to force the point home.

There are hundreds of druggists in this country to-day who are losing money on their business and who will not discover it until the sheriff comes along and sells them out. There are thousands who, not deceived to quite this extent, are not making anything like so much money as they fancy; and there are other thousands who might make much more than they do if they only understood the exact condition of the patient and consequently knew where and when to apply the corrective treatment.

PERCENTAGE EXPENSE VS. GROSS PROFITS.

Let me take up the four things which I have declared to be essential and examine into their necessity with some detail.

The relation between the percentage of expense and the percentage of gross profit is one of vital significance. It throws a flood of light on the business and makes improvements possible in a thousand ways. An address could be delivered on this subject alone, but I must content myself with a few observations only.

Suppose it costs 30 per cent. to do business—30 cents to sell a dollar's worth of goods. Here, then, is a fact which should be considered every time the price is established on an article or line of articles. It is of course perfectly true that one cannot always advance the selling price sufficiently beyond the line of expense. Many "patents" have to be sold at an actual loss, when the cost of selling them has been added to the cost of purchasing them. Many other articles, particularly in cities where the competition of the large druggists and the department stores keeps prices down, have to be sold at very close margins if not at an actual loss. But above and beyond such lines, there is abundant opportunity here and there to establish selling prices which will counterbalance the losses and make the gross profit average up satisfactorily.

In another paper I have commended, and I want again to commend, the practice of a successful Detroit druggist who aims to make 100 per cent. on drugs and prescriptions and 50 per cent. on sundries. Even at that his average gross profit is but 41, the small margins or even losses on "patents" and other goods bringing down the figure greatly. It will perhaps be remembered that Mr. Falkenberg, the Chicago druggist, attained some notoriety in the drug journals a year or two ago by insisting that one should make 200 per cent. on his prescriptions if he desired to get an adequate reward for his time and skill, and if he wanted his business as a whole to yield him the returns that ought to be realized—and it may be said in passing that Mr. Falkenberg wasn't so far wrong as he might have been.

Returning to the factor of average percentage expense, it may be said that this should of course not be applied with hard and fast rigidity. It costs more to sell some goods than others. A rapid-selling patent-medicine, permitting of frequent turnovers of capital, involving no such waste as cannot be escaped in bulk goods, and consuming little of the clerk's time in making a sale, can be handled at a much smaller expense than a prescription. Some allowance should be made for these differences, and when it *is* made it will be seen that patent medicines and similar ready-for-sale goods are after all disposed of at a larger net profit, or certainly at a smaller loss, than otherwise seems to be the case.

But despite this, the small druggist has to be guided more or less clearly by his average gross profit, and he cannot follow the practice of the well-organized department store in considering each department a separate unit, with its own percentage expense and set of figures and rules generally.

It is a good idea to estimate the percentage expense in two ways: by the customary method of including the proprietor's salary among the expenses, and also without this element of cost. Often this plan is of great help. Suppose, for instance, that some article will at best pay a gross profit of but 26 per cent. Your total percentage expense, say, is 30 per cent. Your expense minus your salary is 22 per cent. Such an article, then, is seen to pay a part of your salary allowance, and not to be carried at an absolute loss to your pocket-book. This may prove a comforting assurance if the article is one which a trade demand necessitates that you keep in stock.

WHAT THE NET PROFITS OUGHT TO BE.

In general it may be said that there ought to be a difference of at least ten per cent. between the percentage expense and the gross profit—and the ideal should be to attain as nearly to the fifteen per cent. mark as possible. The average expense of the average druggist is about 30 per cent. The average gross profit is about 40 per cent. If the expenses can be screwed down a point or two, or the profit screwed up, or if both feats can be performed, so much the better. But at the least the two factors should be kept at the respectable distance apart of ten points. As a drug business gets up into fifteen or eighteen or twenty thousand dollars a year, it ought to be practicable in most cases to have a percentage expense not greater than 23 or 25, and in the smaller towns a point lower down than that can be reached.

If the facts could be known, I have no doubt that many druggists would find to their great surprise that they were actually making much less than 10 per cent. net. A Chicago druggist, recently persuaded to estimate his percentage expense and his gross profit, was chagrined to discover that one was 32 per cent. and the other 36 per cent. Once in possession of the facts he was in position to apply corrective agencies wherever possible, and I venture to say that he will never again be lulling himself to sleep in the fool's paradise from which he was so grateful to escape.

Now it must be understood that everything I have said and shall say about gross profits has reference to the profit on the sale price instead of the cost price. Expenses are always estimated on sales, and profits ought to be estimated on them also in order to permit of ready comparisons on the same basis. There is a chance for confusion here and the point ought to be clearly realized. Suppose you pay $1 for a certain product and you desire to make 35 per cent. on it gross. If you make the mistake of adding this 35 per cent. to the cost price you will sell the article for $1.35. Now it will cost you, let us say, 28 per cent. of the selling price to handle the article, which amounts to 39.2 cents, so that while you think you are making a net profit of 7 per cent., you are actually losing 4.2 cents on the transaction!

In this connection a few rules may be of assistance. In order to make a profit of 16⅔ per cent. on the sale price, add 20 per cent.

to the cost; for a 20 per cent. profit add 25 per cent.; for a 25 per cent. profit add 33⅓ per cent.; for a 33⅓ per cent. profit add 50 per cent.; for a 40 per cent. profit add 67 per cent.; for a 50 per cent. profit add 100 per cent.

ARE THE DEPARTMENTS MAKING OR LOSING MONEY?

So far I have discussed the necessity of knowing the first two things in the list of four essentials given at the beginning of this paper—the percentage of expense and the percentage of profit. Now let me say a word about the remaining two. As the third essential I have stated that the pharmacist "*should know whether certain important lines or departments, like those involving cigars, candy, and soda, are making or losing money for him, and, if they are making money, how much.*"

As one of the editors of a pharmaceutical journal which has recently devoted considerable space to the discussion of these business topics, I have within the last year seen many letters from retailers throughout the country which have been full of significance, and which, could I quote them, would illustrate and enforce many of the points which I am striving to make clear in this paper. Several of the letters would be found freighted with meaning in this particular connection.

In one case, that of a Cleveland druggist, we convinced him from his annual statement that he was losing money constantly on both his candy and cigar departments. He had kept separate records of these two departments and of the soda business also. From the figures we found that while the cigar trade yielded theoretical profits of perhaps 25 or 30 per cent., he had actually made but 16 per cent., and that, since his percentage expense was 28, he had lost 12 per cent. Just where the leak was I do not know. Once in a while clerks smoke "on the house." Occasionally cigars are filched from the tops of the cases where some dealers exhibit them. In certain cities competition with the United Cigar Stores Company and other concerns brings the selling prices down below a living profit for the retailer operating under a considerable expense.

The candy department of this Cleveland druggist was seen to yield him a gross profit of only 25 per cent., and so he lost 3 per cent. on that. His percentage expense, estimated without his personal salary, was 23, so that the candy department paid little even

toward his own salary and less than nothing toward making his capital productive. It may be said in passing that bulk candy involves a bigger waste than is realized by most druggists. Clerks are often careless in weighing it, and there is a temptation to take a piece now and then, besides handing one to the customer—especially if the latter happen to be an attractive girl.

Now it must not be hastily assumed that the Cleveland druggist should have thrown his cigar and candy departments overboard because they failed to bring him a profit on the face of the returns. Charles H. McConnell, proprietor of the Economical Drug Store in Chicago, whose daily sales exceeded a thousand dollars, found some years ago that his soda and cigar departments were actually losing money for him and he promptly abandoned them. But this step cannot always be taken by the small retailer. Why? Because if one department is thrown out, and something else cannot be put in its place, the total sales are reduced and the percentage expense is consequently increased. Let me state the situation in another way: the average druggist has a stationary expense; a given department or line, unless it be that of soda, will usually require no more help and no additional expense of any kind; there really is no expense attached to it, then; and the gross profit becomes net profit—everything made is "velvet." It would therefore be unwise in most instances for the small retailer, with limited possibilities, to throw out a department which paid him only 20 per cent. unless he could put in another which paid him more. The large dealer can do this. Ordinarily the small dealer cannot.

But some one might reply to me at this juncture: If we are going to keep our departments anyway, what good will it do us to know the detailed facts concerning their rate of profit? Much good—much good. Every line and every department should realize certain returns—returns which of course are different in every case. One ought to know whether a department is "making good" or not. If it is failing to do so, systematic efforts should be made to stop the leaks and correct the situation. The clerks must be told that the department is not doing what it ought and they should be put on the *qui vive* to improve matters. *Knowledge is power!*

And it must be obvious to every merchant that as *few* goods as possible should be sold at a profit below the percentage expense, and as *many* as possible above it. By no other rule can a satisfac-

tory average be yielded. If it is necessary to carry a lot of stuff that pays indifferently, the thing to do is to expend a little gray matter in planning to put in something that will pay handsomely and bring up the average.

Now as for the fourth essential fact which every druggist ought to know, this is in a sense confirmatory of the other three and consequently need not be discussed at length. A man should know what his annual earnings are in order that he may understand whether the business yields him as much as it should, and in order, also, that he may decide upon his living expenses intelligently. But he should know this fact *with absolute certainty*. That many druggists deceive themselves as to their income by faulty methods of calculation, or by no calculation at all, has been borne home to me after considerable observation and experience.

THE METHOD OF BOOKKEEPING.

Now granting the necessity of knowing the four things which I have declared to be essential to every druggist, the question arises: How may they be learned easily and simply, without expense of time and labor?

After I had read a paper on one phase of this general subject at the last meeting of the American Pharmaceutical Association, a pharmacist came to me privately and said: "I must admit that I am one of the foolish druggists who keep no business records, but my excuse is that I am busy and have no time for them." Others have expressed similar views and there is no doubt that many druggists are deceiving themselves with the assumption that a great deal of time would be consumed in making proper records of their business operations. Still others, again, do not know how to go about the task.

I mean to outline a simple method that will not take five minutes a day and that can be practised in connection with the handling of customers' accounts. Let me say at the outset that this plan will not please merchants who keep thorough and complete records of everything, and who use a double-entry system for the purpose. While the latter method is the ideal one, and while it is employed by all the large retailers throughout the country, I am quite convinced that it would be useless to expect the average druggist to adopt it. He will throw the whole thing aside if too much is expected of him.

Now to begin by summarizing in a single paragraph what the necessities of the case require, let me say that the only records which are absolutely essential, and to which I shall consequently confine myself in this paper, are those involving (1) the sales, (2) the purchases, (3) the expenses, (4) the inventory, and (5) the purchases and sales of departments like soda, candy, cigars, and any other line that the proprietor might want to watch for a year or perhaps constantly. This is all—and it is certainly easy and simple enough. If in addition a cash book is kept, so much the better, but I am confining myself in this paper to the absolute essentials.

Deduct the annual purchases from the annual sales and you have the gross profits. Deduct the expenses from the gross profits and you have the net profits. But you need two checks on these figures, and these are provided by the inventory and the accumulation of surplus cash in the bank or elsewhere. The inventory may show that the stock has increased or decreased, and you may consequently have made several hundred dollars more or less than you would otherwise imagine.[1] Any increase in the inventory should be added to the gross and net profits; any decrease should be deducted from them.

This would give you the final figures except for the additional check provided by the cash accumulations. To go back a little, we have seen that the net profits as first calculated are to be supplemented by the extent to which the stock has increased. A small portion of the year's profits, then, are represented in stock, and the remainder in cash. Now, waiving the item of stock appreciation and considering only the cash returns, it is evident that the latter must tally approximately with the money which has accumulated in the regular bank account, plus any amounts which you may have drawn out during the year in excess of your definite salary or for outside investments. Sometimes a difference is disclosed here that changes the results considerably; and indeed no druggist is in position to estimate his profits for the year accurately unless he corrects them by means of the inventory and careful cash records.

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[1] A Toronto druggist, failing to take an inventory for two years, found that his stock had increased $1,600. An Indianapolis druggist, on the contrary, was surprised to find last year that his stock had decreased over $500. Many actual instances could be cited to show what fluctuations the inventory discloses, and how markedly it changes the results.

Now it is of course readily seen how the four things which I have declared to be essential can be learned from the foregoing records. (1) The percentage expense is gotten by dividing the annual expenses by the annual sales. (2) The percentage of gross profit is gotten by dividing the annual gross profits by the annual sales. (3) The necessary facts regarding the success or failure of certain departments are gleaned from the department records, concerning which I mean to say more in detail later on. (4) The total annual income is obtained by adding the proprietor's salary to the net profits of the business.

DETAILS OF THE METHOD.

How are these records of sales, purchases, expenses and so on to be kept? I shall not outline any hard and fast method. Each druggist may devise a plan which seems to him best and which fits most harmoniously into his bookkeeping system.

The simplest way would be to use a plain ruled book, make upright columns for the several sets of figures with the exception of the inventory, and devote each horizontal line to one day's record, having the date in the first column at the left. The columns at the end for the department statistics should have each two spaces, thus providing for both sales and purchases. The book would then look something like this, subject to such modifications as each druggist might find desirable:

Date.	Sales.			Purchase.	Expenses.			Cigars.		Soda.		Candy.	
	Cash	Cr.	Total		Self	Clerk	Misc.	Sales	Purch.	Sales	Purch.	Sales	Purch.
Jan. 1													
Jan. 2													
Jan. 3													

As for the original entries, these could be treated exactly as you treat charges or credits for or against customers. Make them in a day-book if you use a day-book; put them on slips if you use slips. Every time you buy a bill of goods, or pay out money for an expense, or figure up the day's sales, or do anything else falling

within the scope of these business records, simply enter it as you would when a customer buys goods on credit. In posting from the day-book or the slips, carry the customers' accounts to the regular ledger, and the business records to the special ledger, giving totals only. If it takes you ten minutes every morning to do your regular bookkeeping, it won't take you three minutes more to include this special business bookkeeping. Is it not worth this slight expense of effort?

Something ought to be said in detail about these various records. Total sales for the year of course include credit as well as cash sales; how are they to be handled? There are several methods. One would be to consider all payments of accounts as cash sales, and record them daily as a part thereof. At the end of the year the standing accounts could be deducted from those of the year before, and the decrease or increase subtracted from or added to the sales. A better way, perhaps, would be to have three spaces in the sales column, one for cash sales, another for credit sales, and a third for the totals. This method would enable you to watch your total sales from day to day and month to month.

THE DEPARTMENT RECORDS.

The department records, it will be seen, are in part repetitions of the general records, and this would grieve the heart of the double-entry bookkeeper whose principle it is never to have the same item charged against two accounts at the same time. But as long as we understand that we are repeating charges no particular harm is done. What we are to record concerning the departments are merely the sales and the purchases. Both are recorded elsewhere against the general business, and are only repeated separately in order that we may know how each department stands when considered by itself.

The department sales are easily arrived at, either by using a separate money drawer or cash register for each department, or by figuring up the department sales every day from the itemized slip made by the general cash register. In either case the credit sales are of course to be added so far as they fall within the different departments. The department purchase records are in the main gotten from manufacturers' or jobbers' invoices, but one must not forget also to make a charge of anything that may be taken from

the general stock and used for a department, such as a sponge for the cigar counter, or a few ounces of some flavoring extract for the soda fountain.

The purchases of any department, deducted from the sales, give you the gross profits. It is not practicable for the small dealer, using the same clerks in all departments, and having other expenses common to the general business, to specialize his expense account for any one department. His only method is to apply the average expense of the entire business to the department, and judge the latter by the relation between this general percentage expense and the percentage of gross profit which the department is able to realize. Of course, as in the business at large, the figures must be corrected in the light of the inventory showing.

ONE OR TWO POINTS.

Now there are innumerable other things one might say with profit in discussing these various records, but I fear that I have already exhausted your patience and I must be brief. Just a few words more: Don't be deceived as to your earnings by the failure to mark off annually a depreciation in the inventoried value of your fixtures. Ten per cent. for a soda fountain (which should also be charged up against the soda department in estimating the profits of the latter), and five for the show cases and shelving, are the customary figures. Book accounts, too, should be subjected to the same process of depreciation if you would know exactly where you stand.

And then, in charging up expenses, be careful to include everything: proprietor's salary ($1,200, say), clerks, rent, heat, light, freight, advertising, insurance, taxes, license, and the thousand and one little items that should be considered. An interest charge is not legitimate, because you have included your personal salary in the expense account, and what you realize over that is itself the interest-earnings or dividends on your investment of capital. At the end of every year draw up an itemized list of expenditures; study it carefully, compare it with those of previous years, and see if you are not spending too much money in this place or that.

Now in conclusion I want to say that the business of to-day is conducted in accordance with scientific principles. It is not without significance that the *World's Work*, a magazine whose main purpose is to interpret American life to the American people, has a depart-

ment which it calls "The New Science of Business." The old rule-of-thumb method, or absence of method, was good enough in a less strenuous time, but the man who practises it to-day is out of date, and unless he mends his ways he will inevitably be thrust aside in the struggle for existence. In spite of all the pessimists say, there never was a time when such opportunities present themselves as may be found to-day, and this is as true in pharmacy as it is in other occupations. But it is just as true that there never was a time when it was so easy to fail. This is paradoxical, but it states the fact. There are plenty of prizes, but they are captured by the men who use method on the one hand, and who are possessed of brains on the other. The first is more or less easily practised; for the acquirement of the second I am unable to suggest any ready means.

A SPECIAL FORM OF CHECK FOR PAYING BILLS.

By Henry C. Blair.

Retail druggists require the simplest form of bookkeeping and anything that will simplify it is welcomed. It may therefore be interesting to carefully examine the specimen check sent herewith. It is not original with the writer, but is a careful selection made from various forms in use with the good points retained and the useless or complicated ones omitted.

It is an ordinary bank check with the addition of a line under the amount to be paid reading "in settlement of account as per statement attached," and a double column blank statement form at the left end with the wording at the extreme left as follows: "If correct endorse and deposit, no other receipt required."

By the use of this check, the most complete and safest kind of receipt is secured.

The payee saves trouble of writing receipt, paper and stamp. The check is in the form of a proper legal receipt, and saves the time and trouble of securing and filing a receipt, as the filing of the check, which everyone must do, is sufficient. Any dispute arising about amount paid on receipt given is at once settled by direct evidence of amount paid by the bank.

When bills are received by the writer they are entered on a daily calendar ten days ahead of date. Each morning the bills on the

calendar for that day are paid wherever there is a discount for cash allowed, otherwise they go over for thirty days. Forgetting to pay a bill means a loss of the ten-day discount. Our checks for the past two years show a large amount of money saved in discounts, and we have saved many times the cost of printing the check book yearly, we might almost say monthly.

The only fault we have found with above described check is that some too ignorant to understand or too crafty to endorse so plain a legal receipt may cut the statement off and the check is still good. To obviate this we suggest an improved form and submit a sketch of same herewith.

THE WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY.[1]

By Samuel P. Sadtler.

The establishment by the Trustees of the American Medical Association of an unofficial body of advisers, known as the "Council on Pharmacy and Chemistry of the American Medical Association," has excited some interest on the part of the medical and pharmaceutical professions, and various statements, some considerably at variance with the facts in the case, have been made in professional journals with regard to this action. The simple facts are that the body of fifteen men, whose names appear under this heading of Council on Pharmacy and Chemistry, was gathered by the personal solicitation of Dr. George H. Simmons, the editor of the *Journal of the American Medical Association*, and the members consented to serve with him in that advisory capacity, with two distinct pieces of work indicated from the beginning. One was to advise Dr. Simmons as the editor of the *Journal*, with reference to the true character and actual nature of certain medicines, advertisements of which were offered to the *Journal*, and the other was to follow up this preliminary work by making a compilation of information with regard to reliable remedies which should be published under the auspices of the American Medical Association, and with the title of "New and Non-Official Remedies."

At the time the Council was thus constituted, some eighteen

[1] Read before the Philadelphia Branch of the American Pharmaceutical Association, November, 1906.

months ago, the reputable members of the medical profession particularly were beginning to demand that fakes and sham synthetics be pointed out, and the *Journal of the American Medical Association* was recognized as of such standing and authoritative position before the profession that its advertising columns particularly should be cleared, as far as possible, of this offensive material. We will probably understand this demand better if we look for a moment at the conditions that existed when this movement was started.

Every physician and pharmacist knows the way in which we have been overwhelmed, for some years past, with a flood of German remedies. These synthetics, distributed through American agents of the large German chemical manufacturing firms, are advertised at great expense, and with a profusion of accompanying literature, much of it giving the results of clinical tests in German hospitals, and with a United States patent (usually a product patent) already secured in advance of the introduction of the remedy. Of course with a product patent it is necessary to define the same, and we have, therefore, in most of these cases, very elaborate chemical names and even structural formula to back up the statements as to the identity of the material, although the products were introduced also with short fanciful trade names, of which I will speak specially in a moment. The chemical names, in many cases, were simply paralyzing to the average medical practitioner or pharmacist who is expected to sell the preparation. If you turn, for instance, to the well known preparation "Eucain A," you will find that the chemical name of the same is given as the hydrochloride of "benzol-n-methyltetramethyl-oxypiperidincarbonsäuremethylesters," while with "Eucain B" we get off with a name of half the length, namely, hydrochloride of "benzoylvinyldiacetonalkamins," or, if we turn to one of the newer substitutes for cocaine, named "Alypin," we have as the chemical synonym, "monohydrochloride of Benzoyl-1.3 tetramethyl-diamine-2 ethylisopropylic alcohol." Examples might be multiplied to illustrate this series of impossible chemical names, the result, of course, being that in all cases the special trade name, copyrighted by the German manufacturer or his American agent, came into immediate use, so that the article was always asked for and supplied under that name, but it was soon found that some of these trade-marked proprietary names represented the claims which different manufacturers made for one and the same article, thus Urotropine, Formin, Aminoform, and later Cystogen, all of them repre-

sent hexamethylenetetramine, a chemical compound now recognized as official in the U. S. Pharmacopœia under its proper chemical name. The number of these foreign made synthetics during recent years has grown enormously, so that several small handbooks have been issued, simply to furnish an enumeration and explanation of this class of compounds.

It can be readily seen, therefore, that this state of things could not but have a bewildering effect upon the physician to whom these new and strongly recommended preparations were brought by the agents of the dealers or to whom they were sent in trial samples, and equally paralyzing upon the retail pharmacist who is obliged to keep all of these newer preparations in stock, that might, by any chance, be called for by the physician's prescriptions. It was not possible for the individual practitioner to make a special study of this whole field, which would really be needed to enable him to make a proper selection, and, therefore, he felt obliged to turn to some authoritative expression of opinion on the subject.

It is true the Committee of Revision of the U. S. Pharmacopœia, in making up the text for the Pharmacopœia recently issued (Eighth revision U.S.P.), made a selection of some eighteen of the most important of these synthetic chemical compounds, giving, of course, full accounts of their chemical identity and tests for purity, and, in all but one or two cases, selecting a chemical name, rather than to accept any proprietary name, but as the number continued to increase, and as the reports with regard to their value in actual practice came in, their relative merits changed appreciably, and some organized effort was certainly needed to make a selection of a limited number of the most valuable ones, and furnish the information with regard to them.

When we turn to synthetics of American manufacture, with the exception of a few products, and a very few, of some of our established manufacturing firms, the so-called American synthetic was either a mixture of substances, or else an out-and-out fake. Most of us will recall the showing up of the acetanilid mixtures a year or so ago, most of which had been calling themselves synthetics and, besides having trade-marked proprietary names, had, in some cases, attempted, after the model of the German synthetic, to give chemical synonyms. In one case which came within my personal knowledge, a very elaborate patent specification, regularly issued for a U. S.

Patent, was submitted, describing in detail the method of manufacture of a product, which, on analysis, proved to be simply a mixture of well-known ingredients, in which mixture the reactions of the patent had certainly never taken place, yet it was sold and is being sold as a definite synthetic, with appropriate name and chemical formula on the label.

Illustrations of the fake synthetics put out in this country may also be found in the last number of the *Journal of the American Medical Association*, page 1500, in which not only is the claim made that the substances sold are definite synthetics, but definite and exact chemical formulas are given for the same, in one case accompanied by a most picturesque and perfectly impossible graphic formula in addition.

If this represents the state of things that existed with reference to substances claimed to be synthetics, what was it when we came to proprietary mixtures with trade-marked word-names, and absolute secrecy as to composition, this secrecy being defended on the ground that valuable proprietary rights might be infringed if the public were told the exact composition? It is hardly necessary to ask the question as to where this kind of a thing leaves the doctor. The proprietors of the remedy may change the composition from time to time, and in some cases they boldly acknowledge that the composition of the remedy has been changed, with no word of information as to strength or exact proportion of the ingredients, and in many cases with absolute falsity of statement as to ingredients present.

With this general survey, therefore, of the conditions that existed up to the time the Council was formed, it will be seen that there was the greatest need for improvement, and that the physician, in self-defence, was obliged to ask for some help in this matter.

Shortly after the organization of the Council on Pharmacy and Chemistry, and possibly in part antedating its organization, came the popular outside efforts at reform in the matter of medicines, of which the best-known examples were the publications of the *Ladies' Home Journal*, and later of *Collier's Weekly*. The work of Mr. Adams in this latter journal was certainly very effective in opening the eyes of the public to the condition of things with regard to many of the so-called "Proprietaries." It is true that these *Collier's Weekly* articles only attempted to deal with the worst of these pro-

prietaries, such as the "boozes" and the "dopes;" but this work was, however, of the greatest importance and value, as it did much to bring about a public sentiment, with the result that both State and National legislation has followed. When our recently enacted Pure Food and Drugs Act goes into effect on January 1st, 1907, we will know the per cent. of alcohol, morphine, opium, cocaine, chloral hydrate or acetanilid contained in any of these proprietary mixtures.

Not only this, but in the National Food and Drugs Act we find the following statement in Section 7:

"That for the purpose of this act an article shall be deemed to be adulterated in case of drugs:

"(1) If, when a drug is sold under or by a name recognized in the U. S. Pharmacopœia or National Formulary, it differs from the standard of strength, quality or purity as determined by the test laid down in the U. S. Pharmacopœia or National Formulary, official at the time of investigation, provided that no drug defined in the U. S. Pharmacopœia or National Formulary shall be deemed to be adulterated under this provision, if the standard of strength, quality or purity be plainly stated upon the bottle, box or other container thereof, although the standard may differ from that determined by the tests laid down in the U. S. Pharmacopœia or National Formulary.

"(2) If its strength or purity fall below the professed standard or quality under which it is sold."

This very important provision insures that articles which are labelled "U.S.P." or "N.F." without other qualification, must absolutely conform to the standard of strength and purity of those two publications, which are hereby given official recognition at the hands of the Government. If, on the other hand, the article is distinctly labelled to be of another strength than the official, it may be sold, but its strength or purity dare not fall below the professed standard or quality under which it is sold.

It is obvious that we have here very important aids in maintaining the purity of preparations to be used in medicine, whether they be official or proprietary articles.

When the Council on Pharmacy and Chemistry was constituted, effort was made to have pharmacists, chemists and pharmacologists all represented, and the Council was divided for detail work into

three sub-committees: Committee "A," consisting of five members, being a Committee on Pharmacy, and to these were referred all purely pharmaceutical preparations for special report when necessary; Committee "B," being a Committee on Chemistry, consisting of five members, to whom were referred all questions of chemical analyses and chemical composition, and the verifying of properties of synthetics and other chemical eompounds; and Committee "C," consisting of five members, all of whom were medical men, a Committee on Pharmacology, and to these have been referred all questions as to the nature of drugs, and the therapeutic actions of the various preparations which have been brought to us.

Circulars were prepared, which were sent out to all prominent American pharmaceutical manufacturers, as well as to the agents of the German synthetics and chemical preparations, and publicity was given to this circular also by sending it to most of the prominent medical and pharmaceutical journals. In this circular a number of rules governing the admission of articles to the book "New and Non-Official Remedies," and explanatory comments upon the same, were published. In addition to this, representatives of a number of the most prominent American manufacturing houses met the Council in conference at Cleveland, Ohio, in September, 1905, and in that way the ground was laid for active coöperation.

The result is that the Committee has had to date some 600 or 700 individual articles brought to its attention, in all cases accompanied by samples and whatever literature had been published in connection with them. Forms of labels and circulars were also submitted to the Council, to allow them to judge as to whether the rules which had been sent out were being complied with, so as to justify the admission of these articles to the proposed book. It can readily be seen that a vast amount of work was involved in the study of these many preparations, and the sifting of testimony with regard to them.

A weekly bulletin has been sent out almost since the organization of the Council, which at times covers a dozen or more pages, and the votes of the Council are asked for each week, upon a long list of reports from sub-committees and the Secretary of the Council.

The first effect of the examinations made by the members of the Council was in the pruning of the advertising pages of the *Journal of the American Medical Association*, and it is believed that for months

past these have been practically free from the advertisement of any improper or deceptive preparation.

In the meanwhile, the work of preparing the text for the proposed book has been going on, and within the last few months portions of this text have been published in a tentative way, in the weekly issue of the *Journal of the American Medical Association.* These published descriptions will show the physician the general character of the book, and will give him also reliable information, the result of careful inquiry, and in some cases, of critical analyses, made on the part of the members of the Council.

It is possible, of course, that mistakes have been made in some cases, but it is believed that the mistakes are more generally those of omission rather than of commission, and where such mistakes are clearly pointed out, the Council stands ready to correct them.

When this movement began, the support which it had from the medical profession, while very positive in some quarters, was not at all general, probably because of lack of information on the subject, but it may be safely said, as was shown by the testimony at the meeting of the American Medical Association at Boston, in June last, that the support of the large majority of the members of the medical profession throughout the United States has been given it, and we believe also that back of that stands the public opinion and support, which has very rapidly developed within the past year, because of the great publicity given to the question of proprietary medicines and the rights of their manufacturers to furnish to the doctor and the public mixtures of unknown composition, possibly dangerous in their actual administration.

I am certain that none of us realize the wide-reaching results which the recently enacted Pure Food and Drugs Bill will have, in the way of correcting many of the worst of these abuses, and curtailing the field for the exploitation of some of these proprietary medicines.

THE EFFECT OF PUBLICITY ON THE STANDING AND USE OF NOSTRUMS.[1]

By Charles H. LaWall.

The organization of the Council on Pharmacy and Chemistry of the American Medical Association in the spring of 1905 was the initial step of a movement on the part of two great professions, *i. e.*, Pharmacy and Medicine, to throw off a burden under which the professions themselves and the great American public had been staggering for years and which fast increasing weight was becoming intolerable.

"The Nostrum Evil," as it has rightly come to be called, has grown so insidiously, partly because of the cowardice and more particularly because of the laxness of the two professions which are best able to cope with it and combat it successfully, that, at the present time, it constitutes a veritable ogre Frankenstein, whose crimes are no less atrocious than those of its mythical prototype, but whose form has become so familiar that there are still those who would defend the system of charlatanism and fraud with which it has enveloped itself.

Although more than a year has passed since the opening blow was struck, and although many powerful thrusts have been made by the two-edged rapier of scientific investigation and publicity, the hydra-headed character of the evil has shown the necessity of extra-herculean efforts which would tax the ability of that hero, the accomplishment of whose twelve labors entitled him to a well-earned immortality.

Originating as it did in the spring of 1905, backed by the American Medical Association, with a special department in the official journal of the Association to give its findings publicity, the first blow that was struck was aimed at an evil which affected both physician and patient—the list of acetanilid mixtures which previous to that time had been masquerading in fancied security under high-sounding titles and accompanied by extravagant and for the most part baseless claims. The publishing of the facts in the cases of such preparations as ammonol, antikamnia, phenalgin, salacetin and others directed the attention of the entire medical pro-

[1] Read before the Philadelphia Branch of the American Pharmaceutical Association, November, 1906.

fession to conditions which had been known to some of its members for a long time, *i.e.*, that, instead of being synthetic compounds with any valid claim to originality, they were mixtures of varying proportions of acetanilid with an alkali such as sodium bicarbonate or ammonium carbonate, with or without the addition of caffeine to aid the therapeutic effect.

Artistic mysticism is the appropriate designation which has been accorded to the methods by which fanciful names and ridiculous claims were so interwoven as to give an air of plausibility calculated to deceive the practitioner who can not be expected to distinguish the high sounding spurious synthetic names from the plain every-day titles of the component parts. With the striking of this first blow came the open declaration of war upon the council and its supporters from the various interests both directly and indirectly affected. To the shame of both professions it must be admitted that there were not lacking journals where the enemies of reform could entrench themselves and oppose the work of the Council.

Accusation and recrimination became the order of the day. Unofficial exposures were made of hosts of other similar preparations. The department of Pharmacology in the *Journal* was thrown open for free discussion of a subject which previous to that time had been studiously avoided by those who had interests at stake and concerning which few journals would risk the publication of any facts which might affect or jeopardize their advertising interests. From every quarter came the demand to make a searching investigation of the subject in order that the wheat might be separated from the chaff, and that the correct and intelligible composition of many of these questionable preparations might be placed in the hands of the practicing members of the profession upon whom would then rest the responsibility for their further employment in medicine.

In October, 1905, Samuel Hopkins Adams, a forceful magazine writer, aided by *Collier's Weekly*, took up the battle and carried it directly before the laity in a series of articles entitled "The Great American Fraud," in which nostrums like Liquozone, Peruna, and others were pictured as they really exist when divested of the claptrap of suggestive and misleading statements written by direct lineal descendants of Mendax I. In this series of articles was published the reason for the silence of the daily newspaper press upon all matters pertaining to the fraudulent character of these preparations —the existence of the famous "Red Clause," whereby an advertis-

ing contract could be cancelled in case of effective opposition by legislative enactment.

Following close on this work, which had been aided by similar articles by other authors in the *Ladies' Home Journal*, came a crushing blow, which caused such a scurrying of vermin in the wainscoting, a clanking of chains in forgotten cellars and a rattling of dry bones in secret chambers as had never before been heard. It was the publication of the list of membership in the Proprietary Association of America, and be it to the credit of many well-known firms that immediate withdrawal from this unsavory alliance was the first order of business for some time immediately following this publication. A glance at the list as first published shows the catholicity of commercial interests, for here are allopath, homœopath, eclectic and therapeutic buccaneer under the same umbrella of unity of interests, which unity seems to be the dissemination of misinformation and the hoodwinking of the public.

Men of standing in the affairs of the National Associations and others entered the arena and contributed liberally to the campaign of education which had begun in earnest. Determined opposition to the work of the Council, which was expected at the Boston meeting of the Association, fell flat and the Council began with renewed vigor to carry out its mission.

In June, 1906, what was probably the crowning blow which has thus far been struck was delivered by the successful passage of the Pure Food and Drugs Act, the manifold provisions of which, regarding labeling and publishing unwarranted and extravagant claims, will cause the inauguration of a new era in the history of the conflict.

The most recent official reports have dealt with three preparations, Somnos, Uron and Thialion, of which the latter two had been marketed by the customary cuttlefish-like methods of employing words to conceal the truth. In the case of Somnos the firm manufacturing it have protested against the decision of the Council and have admitted expert evidence in support of the position they have taken, so that this matter is far from being settled at the present.

Such is, in brief, the history of the campaign up to the present time. Now the question arises, what effect has this publicity already had and what effect will it have in the future upon the

standing and endorsement of the nostrums concerned? If we go by the advertisements in the daily papers the effect is scarcely noticeable, for when we open the pages of almost any one of them we are confronted with the familiar faces and testimonials of those who owe their lives to the wonderful curative powers of these self-same remedies which have been so unsparingly handled by Mr. Adams in *Collier's Weekly*. It is true that Mr. Hartman has announced that after years of patient experimenting he has been able to add a small amount of a laxative drug to Peruna which removes from it the slanderous imputation that it is purely a "booze," although the percentage of alcohol has not been reduced; and the death of Lydia Pinkham has at last been announced to the public in the advertisements of that nostrum with the information that, although the dear old lady has long since passed to her reward, her work of personally attending to the complaints of suffering womanhood is still attended to by her daughter-in-law, although why the information should have been withheld for so many years is not vouchsafed. The greatest obstacle at the present time is the continued opposition of the general lay press to the work of reform, the information in *Collier's Weekly* having reached but a small proportion of the users of this class of preparations. The *Literary Digest* is one of the most recent periodicals to free itself from the imputation of being biased, by publishing extracts from Mr. Adams' papers, which are now published in the form of a booklet and sent out by the *Journal of the American Medical Association* upon the receipt of the nominal price.

It is probably too soon to express an authoritative opinion on the question as to the effect of all this publicity, but there are some considerations which must not be lost sight of at this stage of the work. The facts already published should not be allowed to lose their potency by remaining undisturbed in the records of the literature of the time. There is a young and advancing army of students to whom these facts should be presented as necessary for them to know to keep from falling into the evil paths of many of their predecessors.

The physician of the future who prescribes and the pharmacist who dispenses a nostrum of this character should not do it in ignorance of the true facts, as has been so often done in the past, but should be warned in no uncertain manner, so that the responsibility for

their continued use may be placed where it belongs. It is the province of the Council of Pharmacy and Chemistry to point out and recommend; the individual members of the medical and pharmaceutical professions must then proceed to act upon these recommendations.

It must also be remembered that mankind has always shown a tendency to worship new and strange gods. The words of P. T. Barnum, that "the American people like to be humbugged," were never more true than they are to-day, and the disciples of Ananias who write the literature of most of the nostrums have never had more abundant opportunity to ply their arts upon a willingly gullible public.

Intelligibility of nomenclature should be insisted upon as a primary requisite in the case of new preparations. St. Louis, the home of medical charlatanism and pharmaceutical fakery, has already furnished names enough which might with equal propriety apply to parlor cars or summer-resort boarding-houses.

There is not enough attention paid in the medical schools to prescription writing, practical therapeutics and incompatibility. Most education along medical lines seems to reach diagnosis and then fall short. A recent case in point known to the writer was where a practitioner used almost every known appliance and aid known to diagnosticians, including a blood-count and a cryoscopic test of the urine, and then prescribed a nostrum with the composition of which he was unacquainted.

If the publicity attendant upon the nostrum evil has no other effect than to direct medical and pharmaceutical education to lines which have heretofore been neglected, it will serve the ultimate purpose of bringing both of the professions to a realization of the responsibility which they jointly share in the discouragement of conditions which are detrimental not only to the professions themselves but to their constituents, the American public.

WHY PHARMACISTS SHOULD SUPPORT THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION.[1]

By John K. Thum.

To be deserving of the title pharmacist the aspirant should be a scientist, and being such he must realize that the end for which the Council on Pharmacy and Chemistry of the American Medical Association is striving, is the truth! It has long been known to well-informed pharmacists that the literature put out in connection with many of the newer remedies is not only misleading as to their composition, source of origin, and therapeutic properties, but not a few are of an absolutely fraudulent nature. A few recent reports of the investigations of the Council, published in the *Journal of the American Medical Association*, of the attempt of manufacturers to mislead credulous physicians illustrates forcibly the need of watching manufacturers. That there is a legitimate field for the discoverer and manufacturer of medicinal remedies is plain to every fair-minded man, but he must not be allowed to prey upon humanity like a vulture.

The work of the Council can be utilized by up-to-date pharmacists in educating and informing physicians in matters pharmaceutic instead of allowing smooth-tongued detail men to act as their pharmaceutical mentors. Pharmacists should assert themselves and make physicians appreciate more and more the true standing of the newer remedies, and the possibilities of the Pharmacopœia and National Formulary. Physiologic or therapeutic results obtained by the use of many of the newer remedies can ofttimes be obtained just as readily by a judicious use of the drugs and preparations contained in these two noted books—scientific books which for careful selection and comprehensiveness cannot be equaled.

When physicians, as often happens, come to the pharmacist for information about drugs and medicinal preparations contained in the Pharmacopœia and National Formulary, they naturally expect him to be able to give them all of the desired information, not alone pharmaceutical but also chemical, etc. If physicians inquire for information about new and non-official remedies, the pharmacist, if he is progressive enough, should be able to aid him very mate-

[1] Read before the Philadelphia Branch of the American Pharmaceutical Association, November, 1906.

rially if he has kept and is constantly keeping himself in touch with the work of the Council. When the Council publishes a report of a remedy and gives its reasons for not favoring it for a place on its list of new and non-official remedies, the pharmacist should know about it. All this knowledge, which he can easily obtain by a faithful perusal of the published results of the work of the Council, is now appearing in the *Journal of the American Medical Association.* If the average pharmacist is qualified to give physicians what they desire, well and good; if not, then it must resolve itself into a question of the survival of the fittest among them: there will be a separation of the true pharmacist from the mere seller of drugs, patent medicines and so forth. There will be professional men and tradesmen. To regain the good-will and respect of medical practitioners is the only hope the pharmacist has of making true pharmacy triumph over the spirit of commercialism that pervades it at present and is dragging it down into the mire of mere trade and shopkeeping.

The organization of the Council shows plainly that medical practitioners are alive as to protecting themselves, and pharmacists can best demonstrate their right to protection by co-operating with the Council whenever possible and offering friendly criticism when honestly thought justifiable. The pharmacist owes it, not only to himself, not only to the doctors, but to the public at large who must, in the last analysis, depend on him to protect them from unscrupulous manufacturers of medicinal remedies. In this country the law holds the pharmacist responsible when he dispenses a prescription containing a lethal dose; if the law places the pharmacist between the physician and patient in this particular regard why should he not be held responsible for dispensing harmful nostrums? Moral law demands that he should be ever on the alert to safeguard the public health.

The work of the Council has resulted in a more widespread interest on the part of physicians in the Pharmacopœia and National Formulary. If this were the only good the Council had brought about it would be sufficient reason for the unqualified endorsement and support of pharmacists. When the interest of physicians becomes more awakened and general as to what these books, rightly used, can do for them, then pharmacy will surely come into its own, provided the members of the profession prove themselves worthy.

A SIMPLE SYSTEM FOR PERSONAL ACCOUNTS.

By E. Fullerton Cook.

The system of recording sales as herein described, while applicable, through slight modifications, to a large general business, is primarily intended to supply the need of a retail dealer whose chief object in "keeping books" is to be able to render bills to his customers regularly and accurately, with the least amount of labor.

It may not be amiss to briefly describe the usual method adopted, which is generally known as "single-entry bookkeeping."

Two books are used: a day-book and a ledger. The day-book is placed in some convenient place in the store, and into it are written, by the various clerks or the proprietor, a record of the sales, which are to be charged, together with the customer's name. The same book is used for a credit when a bill is paid or "cash on account" is received.

At stated periods, usually once a month, the proprietor will post these entries, made in the day-book, to the debit or credit, as the case may be, of the customer's account in the ledger, frequently writing out the items in full.

When all of the entries from the day-book have been made in the ledger, itemized bills or statements are prepared from the ledger accounts and sent to each customer.

The system suggested as a substitute for this well-known method of keeping personal accounts involves the same principles, but lessens the amount of work required, and it is believed will decrease the losses and annoyances due to the failure of a clerk to take time to go to the day-book for the making of a record during a rush of work and afterward forgetting to do so.

In the simplest form it consists of a sale-slip, in pads, which may lie by the cash register or drawer, or be carried in the pocket, and when a sale is made which is to be charged, upon it is entered first the date, customer's name and address, and following it the items of the sale. The slip is then "rung up" in the register under the "charge" key. A credit is made in the same manner, although the slip should be of a different color and have "credit" printed upon it, and then be placed in the register under the "credit" key.

Many variations in the form of these slips are possible. If desired, they may be secured in duplicate or triplicate, and in the latter case a copy usually goes to the customer with the purchase. But for

most purposes of a comparatively small business, the single copy is sufficient and satisfactory. Numbering the slips consecutively is valuable as a means of checking, and may be readily done with a prescription-numbering machine.

At the close of the day the slips are removed from the cash register by the person who has that part of the business in charge, he noting the fact that they correspond in number to the charges or credits rung up and also that no numbers are missing, if they have been numbered. His next duty is to post the accounts in his ledger. For this purpose a special arrangement has been devised for the purpose of avoiding the copying of the items of the charge with its subsequent loss of time and added work.

A vertical file is provided, of the same size as the slip or slightly larger, a standard, 3 x 5 inches, size is large enough, or 5 x 7 inches if preferred. The individual folder has a printed form on the outside for entering the date and amount of the purchase, a device for holding the slips, and they stand, in the case, on end, opening from the end, each having a raised tab for the name of the customer.

In posting the sales of the day, the desired folder is lifted from the card-index case in which they are arranged alphabetically, the date and amount of the sale written upon the outside, and the sale slips put into place and the folder returned to the case, thus posting the item; each slip being treated in the same way.

From the record upon the outside may readily be learned the amount which the customer owes, and when it is desired to make out an itemized bill it may be done from the original slips.

As the bills are made out the slips are retired, in regular alphabetical order, to a filing device which makes the slips of the month into a book, which may readily be referred to, while the total sum of indebtedness and credits remain upon the card, and are replaced in the case ready for the succeeding month. Some of the advantages of the system are:—

First.—For every sale, cash or charge, the clerk must go to the cash-drawer or register and thereby be less apt to forget to make a charge or credit upon the day-book.

Secondly.—The ledger accounts are always active, any dead accounts may be immediately removed from the card-index case which gives the same advantages as a loose leaf ledger.

Thirdly.—And principally, the items of the charge need not be copied in the ledger, whereby time and work is saved.

NEW ESSENTIAL OILS.[1]

Two oils which had not been produced up to the present were sent to us for approval by the Syndicat du Géranium Bourbon. They are the oils from *Evodia simplex* Cordem., and from *Pilea* spec. nov. Both plants are indigenous to Réunion and grow there in the wild state.

Oil of Evodia simplex.—This plant belonging to the family Rutaceæ is closely allied to *Toddalia aculeata* Pers., which has essential oil[2] both in the leaves and in the bark of the roots. The yellow-green, mobile oil has a pleasant, not obtrusive odor. The fact that the oil strongly reminds of Réunion geranium oil, is, according to the manufacturer, due to the use of stills employed in the geranium oil production. $d_{15°}$ 0·9737; a_D — 13°4′; acid no. 2·1; ester no. 16·4; ester no. after acetylation 63·3. The oil forms a clear solution in 0·9 vol. 80 per cent. alcohol, with a slight separation of paraffin, but does not completely dissolve in 10 vol. 70 per cent. alcohol. In a freezing mixture it becomes cloudy with separation of a very few colorless scales, but does not solidify. After it had been seen that up to about 190° (ordinary pressure) nothing distilled over, the oil was fractionated in vacuo (3 mm. pressure), when it boiled between 90 and 140°. The portion passing over on repeated distillation from 97 to 100° (2·5 mm. pressure) ($d_{15°}$ 1·006; a_D — 4°) had a pronounced odor of eugenol methyl ether. The further examination showed that this body was actually present. The oxidation of 6 g. of this oil with a solution of 18 g. permanganate in about 400 c.c. water gave a fair yield of veratric acid, colorless thin small needles of the m. p. 177·5°. Repeated recrystallization did not raise the melting point further.

From the last fraction of the oil a body crystallized out which after recrystallization from 90 per cent. alcohol formed long colorless needles, which proved to be a paraffin by their difficult solubility in alcohol, and their indifference towards concentrated nitric acid. Its melting point lay between 80 and 81°.

Eugenol methyl ether and a paraffin melting at 80 to 81° have, therefore, been found by us in the oil of Evodia simplex Cordem.

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[1] Abstract from the Semi-annual Report of Schimmel & Co., October, 1906.

[2] Gildemeister and Hoffmann, "The Volatile Oils," p. 460.

Pilea Oil.—The still unnamed species of *Pilea* from which this oil had been distilled belongs to the Urticaceæ, a family whose members had not up to the present yielded an essential oil. The water-white very mobile oil had a turpentine-like but not disagreeable odor. It contains a small quantity of pinene, but it is still undecided what the bulk of pilea oil consists of.

CORRESPONDENCE.

CULTIVATION OF LICORICE.[1]

My Dear Dr. Kraemer:—While the importance of licorice root as an article of commerce in this country is well-known, there has been but little opportunity to become directly informed respecting the plant itself, at least until within a very recent period.

Growing wild, over vast areas in its native (and distant) countries, we have accepted what has been sent to us as all licorice root, and a plant with its parts in their entirety by which an accurate study could be made, has been almost impossible to obtain.

My father, as you know, was most deeply interested in everything pertaining to the subject, and having observed for himself on the spot all the various processes through which the root passes from digging to final shipment, it became his conviction that could the root be grown in this country, there would be not only a very great benefit to the consumers, but also a new industry provided which in due time would prove a source of profit to the grower.

For the purpose of studying the plant at close range, he obtained a number of cuttings, a few of which were planted in the yard of our home; the average city back yard is not calculated to afford the best conditions under which to introduce and nourish a new plant, so far removed from its usual surroundings, but being hardy by nature, it was thought that if it showed any tendency to grow under such unfavorable conditions, much could be reasonably expected of it when propagated with care, in soil adapted to its needs.

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[1] This communication was received some weeks ago, as also the specimen of licorice plant, grown by the late Henry N. Rittenhouse, which has been added to the collections of the Philadelphia College of Pharmacy.

I cannot recall just how long since the first plants were put down, probably fifteen years ago, but most of them are still alive and have produced new ones; a few more were added about two years later which have also done well, and from some one of them a new one came which in turn produced the specimen now in your hands.

I judge the oldest part of this plant is from four to six years old; the small runner (with the sprout at the end) is about two years old; while those sprouts at the extreme end of the longest runner made their appearance last spring (1906).

Knowing that on a commercial basis, the *first* crop of marketable root would be obtained at the end of the third year, the above named lengths of time and the quantity of actual root obtained do not seem to promise large returns; but, considering that these plants have lived and made their way of their own accord in a layer of common dirt, with a hard massy clay bottom, under the bricks of the pathway, without any cultivation or transplanting, only ordinary care in summer and none at all in winter, I think the present specimen not only gives us a very good sample of what an entire plant looks like, but of what it is capable when the conditions are made to suit it; and the conditions would not have to be at all severe to enable it to produce the equal of any that is brought here, and that too, within the normal time.

As I said, this specimen is the outgrowth of some one of the original plants; the lower ends of the tap-roots (the real licorice root) were so tightly embedded in the clay, and so deep, that I could not get them out for their entire length; I left probably a half of the longest one in the ground; had the soil been appropriate, there is no doubt that for the length of time the plant has grown, the yield of root would have been excellent.

Directly from the parent plant, the runners have spread until the one with the small sprout forced its way up to the surface between the bricks; the next one (with the bud on the end) I found in good position to come to the surface next spring, and the longest one had worked its way in almost a straight line just under the bricks for its entire length, until it too found an opening to come up.

Notice at intervals the young roots on the lower side of this long runner, they also are the real root and are the points at which new shoots would appear when the plant is free from obstructions.

From this one specimen it is plain to see how the plant spreads,

reproduces itself and lives with even little to favor it, very much the same as it exists in its native regions; and having also seen it under cultivation myself, there is no doubt in my mind that it is possible to grow licorice root in the United States with entire success.

Philadelphia. DANIEL S. RITTENHOUSE.

BOOK REVIEWS.

SECOND REPORT OF THE WELLCOME RESEARCH LABORATORIES AT THE GORDON MEMORIAL COLLEGE, KHARTOUM. By Andrew Balfour, Director, Department of Education, Sudan Government, Khartoum, 1906.

As this is the first of the reports which have been received for review in this JOURNAL it may be desirable to call attention to the functions of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. These are (*a*) To promote technical education. (*b*) To promote the study, bacteriologically and physiologically, of tropical disorders, especially the infective diseases of both man and beast peculiar to the Sudan, and to render assistance to the officers of health, and to the clinics of the civil and military hospitals. (*c*) To aid experimental investigations in poisoning cases by the detection and experimental determination of toxic agents, particularly the obscure potent substances employed by the natives. (*d*) To carry out such chemical and bacteriological tests in connection with water, foodstuffs, and health and sanitary matters as may be found desirable. (*e*) To promote the study of disorders and pests which attack food and textile producing and other economic plant life in the Sudan. (*f*) To undertake the testing and assaying of agricultural, mineral and other substances of practical interest in the industrial development of the Sudan.

The present volume contains papers on the following subjects:

(1) Mosquito work in Khartoum and the Anglo-Egyptian Sudan generally.

(2) Biting and various insects other than mosquitoes.

(3) On some blood-sucking Diptera from the Anglo-Egyptian Sudan collected during the year 1905, with descriptions of new species. By Ernest E. Austen.

(4) A second report of the mosquitoes or Culicidæ of the Sudan. By F. V. Theobald.

(5) Human and animal pests. By F. V. Theobald.

(6) Vegetal pests. By F. V. Theobald.

(7) A hæmogregarine of mammals. By H. Balfour.

(8) The Leucocytozöon of mammals. By L. Muris.

(9) Changes in the erythrocytes of the Jerboa.

(10) Typanosomiasis in the Anglo-Egyptian Sudan.

(11) Routine work: List of examinations made; Notes on communicable diseases and parasites.

(12) Miscellaneous notes: Blood examinations; Bilharziosis.

(13) Report of the traveling pathologist and naturalist Dr. Sheffield Neave.

(14) Report of the Chemical Laboratory. By William Beam.

It is impossible to abstract these papers in a review. The work comprises more than 250 pages and with over 100 illustrations, some of which are colored, contains a vast amount of information on the subjects mentioned and is a valuable contribution to science.

From the fact that these laboratories are located in the countries where the conditions prevail which conduce to the development of certain infectious diseases, the researches should be of special value and interest.

ARBEITEN AUS DEM PHARMACEUTISCHEN INSTITUT DER UNIVERSITAET BERLIN. Herausgegeben von Dr. H. Thoms, Professor und Leiter des Pharmaceutischen Instituts der Universität Berlin. Dritter Band. Umfassend die Arbeiten des Jahres 1905. Mit 7 Textfiguren und 1 Tabelle. Urban & Schwarzenberg: Berlin, N., Friedrichstrasse 105b. 1906.

In this publication of 334 pages is given a number of papers embodying original work. The titles and names of authors are given for the benefit of those of our readers who may be interested in the subjects considered:

(1) The Determination of Nitrites and Nitrates by the Electrolytic Oxidation of Ammonia in Connection with Copper Oxide. By W. Traube and A. Biltz.

(2) Electrolytic Nitrite Formation. By A. Schönewald.

(3) The Action of Oxygen upon Aliphatic Amines in Connection with Copper. By W. Traube and A. Schönewald.

(4) The Action of Aldehydes upon Orthodiamine of the Pyridin Series. By W. Traube and W. Nithack.

(5) Synthesis of 3 Methylhypoxanthins. By W. Traube and F. Winter.

(6) Some Derivatives of 4-5 diamino-6-oxy-2-thiopyrimidin. By F. Winter.

(7) The Use of Potassium-bismuth-iodide Solution for the Estimation of Alkaloids. By H. Thoms.

(8) Some Studies on Tannin. By H. Thoms.

(9) Caryophyllin. A Preliminary Paper. By J. Herzog.

(10) The Different Extraction Methods of Drugs in the Preparation of Tinctures and Extracts. By J. Herzog.

(11) The Preparation of Extracts without Evaporation. By J. Herzog.

(12) New Medicaments for 1905. By J. Hochs.

(13) An Examination of the Lecithin of the Market. By G. Fendler.

(14) Maretin. By F. Zernik.

(15) Bioferrin. By F. Zernik.

(16) Stovain. By F. Zernik.

(17) Isopral. By F. Zernik.

(18) Eumydrin. By F. Zernik.

(19) Thermiol. By F. Zernik.

(20) Floricin Preparations. By G. Fendler.

(21) Urocitral. By F. Zernik.

(22) The Action of Exodins. By F. Zernik.

(23) The Preparation and Testing of Chininum arsenicicum. By R. Lucius.

(24) Phenacetin adulterated with Parochloracetanilid. By C. Mannich.

(25) Noordyl Drops. By F. Zernik.

(26) Pink Pills. By F. Zernik.

(27) Slankal. By F. Zernik.

(28) Fucol. By G. Fendler.

(29) Dalloff Tea. By H. Thoms.

(30) Antipositin. By F. Zernik.

(31) Vial's Tonic Wine. By F. Zernik.

(32) Uten's Antiepileptic. By F. Zernik.

(33) Kaiser-Borax. By F. Zernik.

(34) Frank's Gallstone Remedy. By F. Zernik.

(35) Alvatunder. By F. Zernik.

(36) Melioform. By F. Zernik.

(37) Leukrol. By F. Zernik.
(38) Hämostypticum Brüninghausen. By F. Zernik.
(39) Kuhnke's Medicine. By F. Zernik.
(40) Oliophen. By F. Zernik.
(41) Pastor Felk's Plant Tonic. By F. Zernik.
(42) Capsula Duplex Stomachica Bouri. By F. Zernik.
(43) Bioson. By Artur Sörmann.
(44) Sterner's Oriental Powder. By F. Zernik.
(45) Iodvasogen and Iodvasoliment. By F. Zernik.
(46) Uricedin "Stroschein." By F. Zernik.
(47) Muglitzol. By F. Zernik.
(48) Smith's Gloria Tonic. By F. Zernik.
(49) Lazarus Soap. By F. Zernik.
(50) Nalicin. By F. Zernik.
(51) August Schrader's Plaster. By F. Zernik.
(52) Winther's Nutrient Salts. By F. Zernik.
(53) Frick's Rheumatikon. By F. Zernik.
(54) Retterspitzwasser. By F. Zernik.
(55) Cyllin. By J. Kochs.
(56) Dr. A. Oetker's Salizyl. By J. Kochs.
(57) D. Zinsser's Lysol Pills. By J. Kochs.
(58) Eusemin. By J. Kochs.
(59) Anticelta Tablets. By J. Kochs.
(60) Migraenol. By J. Kochs.
(61) Kaiser-Natron. By J. Kochs.
(62) Antidiabetikum Stock. By J. Kochs.
(63) Electricum. By J. Kochs.
(64) Reichel's Wachholderextract. By J. Kochs.
(65) Korber's Remedy for Tuberculosis. By J. Kochs.
(66) Stege's Herb Wine. By J. Kochs.
(67) Hébesin. By J. Kochs.
(68) Thymidol. By J. Kochs.
(69) Dr. Lauser's Stomach Powder. By J. Kochs.
(70) Dr. Lauser's Cough Drops. By J. Kochs.
(71) Perox o Cop. By J. Kochs.
(72) Determination of Methylalcohol in Preparations containing Ethyl alcohol. By G. Fendler.
(73) The Secretion of Butyrospermum Parkii or so-called "Karite-gutta." By G. Fendler.

(74) Pottwaltranes. By G. Fendler.

(75) The Fatty Oil from the Seeds of Manihot Glazionii. By G. Fendler and O. Kuhn.

(76) Examination of Different Soaps. By J. Kochs.

(77) Mistelkautschuk. By G. Fendler.

(78) The Natural Mineral Water of Carabana. By A. Walter.

(79) The Determination of Foreign Coloring Matters in Fats. By G. Fendler.

(80) The Determination of Boric Acid. By G. Fendler.

(81) A new Steam and Pressure Percolator. By W. Lenz.

(82) Apparatus for Determining Melting Points; and new Funnel for Filtration under Pressure. By W. Lenz.

(83) A Holder of Test-Tubes for Demonstration Purposes. By H. Thoms.

PHILADELPHIA BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

NOVEMBER AND DECEMBER MEETINGS.

The stated meeting for November of the Philadelphia Branch of the American Pharmaceutical Association was held on the evening of Tuesday, November 6, 1906, in the College of Physicians, and was devoted to a discussion on "The Work of the Council on Pharmacy and Chemistry of the American Medical Association."

The meeting was attended by some forty members and visitors, all of whom manifested a keen interest in the subject matter under discussion.

Before taking up the scientific business of the evening an election for a member of the Council of the American Pharmaceutical Association was held. This resulted in the selection of M. I. Wilbert as the representative of the branch in the Council of the Association.

The first paper that was presented, that by Prof. S. P. Sadtler, contained some reference to the conditions which led up to the inauguration, or founding, of the Council on Pharmacy and Chemistry by the Trustees of the American Medical Association and also outlined in a general way the methods that had been pursued and the objects that were sought to be attained (p. 22).

In speaking of "The Endorsement of the Council on Pharmacy

and Chemistry by Medical Men," Dr. Alfred Stengel pointed out that the present work of the Council was largely in the nature of a compromise with manufacturers, and would, no doubt, lead up to more satisfactory conditions in the future. Dr. Stengel also said that the opposition that had existed to the Council was largely due to ignorance or cupidity and was fast giving way to a healthy sentiment of endorsement, as the object and the aims of the Council were becoming more fully understood.

Dr. Stengel thought that while physicians had been remiss in allowing themselves to be imposed on by detail men, pharmacists had also been remiss in not keeping physicians informed of the misleading statements that were being made in connection with these supposedly new remedies. He pointed out the danger of including advertising material of other, at times dangerously potent, preparations with articles designed for popular consumption, and related an experience that he had had with a patient who had a well-developed idiosyncrasy for chloral. Dr. Stengel also made a strong plea for the adoption of short, easily remembered, or catchy names for official or semi-official articles, and expressed the belief that this was one of the strongest reasons for the popularity of nostrums.

Professor LaWall, in speaking of "The Effect of Publicity on the Standing and the Use of Nostrums," referred to the exposures of the composition of so-called ethical proprietary preparations that had been made by the *Journal of the American Medical Association* and also called attention to the work that had been done in connection with popular nostrums by Mr. Samuel Hopkins Adams, in *Collier's Weekly*. (See this JOURNAL, p. 29.)

The concluding paper on the program, "The Needs of the Council," was contributed by Prof. W. A. Puckner, the Secretary of the Council on Pharmacy and Chemistry of the American Medical Association, and outlines how and why pharmacists should contribute to the work that is now being undertaken by the Council. (See this JOURNAL, December, 1906, p. 584.)

As noted before, quite a number of the members present took part in the general discussion.

Mr. John K. Thum said that a pharmacist should be a scientist and as such should aspire to discover and to disseminate the truth. He should, himself, become thoroughly acquainted with the contents of the U.S.P. and of the N.F. so that he would at all times be pre-

pared to give satisfactory information regarding any one of the articles contained in these books. (See p. 34.)

Mr. Franklin Apple thought that the pharmacist had been remiss in informing medical men of the abuses connected with nostrums largely because of a feeling of fear that physicians would resent such information when offered.

Dr. Clement B. Lowe referred to the large number of proprietary remedies that the retail pharmacist was obliged to carry in stock. Many of these preparations are ultimately exploited directly to the laity.

Prof. Henry Kraemer spoke of the importance of educating medical men to seek the co-operation and the advice of pharmacists in matters relating to medicinal preparations.

Mr. Samuel J. Riegel said that he had had an extensive experience with physicians and had always found them willing to receive information when properly offered.

Mr. Thomas H. Potts said that he had been impressed by the suggestions and thoughts that had been expressed by the members present and called attention to the need of cultivating and maintaining a high degree of self-respect on the part of the pharmacist. He further said that some degree of discernment should be shown as to when and how physicians are accosted.

Mr. Vanderkleed called attention to the very wide field that the Council had essayed to cover and thought that any attempt to judge of the therapeutic action and uses of new remedies, by such a limited body, would lead into difficulties.

Mr. M. I. Wilbert pointed out that the work of the Council was entirely limited to pharmacy, chemistry and pharmacology and that no attempt was being made to recommend articles for their therapeutic uses.

After some additional discussion on the subject-matter before the meeting, the following resolutions were offered, and on motion adopted:—

Resolution Favoring Exhibitions of U.S.P. and N.F. Preparations.—WHEREAS, It appears to be desirable that physicians be made more fully acquainted with the contents of the Pharmacopœia of the United States, and of the National Formulary, and that they be given some practical demonstration of the resources and the abilities of present-day pharmacists; therefore, be it

Resolved, That the Philadelphia Branch of the American Pharmaceutical Association favors holding a scientific exhibition of U.S.P. and N.F. preparations, in connection with annual or stated meetings of medical societies in its territory; and, be it further

Resolved, That a committee of five members be appointed by the chair to co-operate with the executive committee of this branch in obtaining the permission for and in organizing such exhibitions.

Resolution Endorsing Council on Pharmacy and Chemistry.—WHEREAS, The practice of pharmacy constitutes an important branch of the science of medicine; and,

WHEREAS, Secrecy in any one department or branch of a science must of necessity be a menace to and detract from accurate observation and rational progress in other departments and branches of the same science; and,

WHEREAS, The American Medical Association, in establishing the Council on Pharmacy and Chemistry, has recognized and endorsed this underlying principle of true progress, in the science of medicine, through the department of pharmacy; therefore, be it

Resolved, That we, the members of the Philadelphia Branch of the American Pharmaceutical Association, heartily endorse the objects and the aims of the Council on Pharmacy and Chemistry of the American Medical Association; and, be it further

Resolved, That, individually as well as collectively, we pledge our active support and co-operation to the Council in the work now in hand.

M. I. WILBERT,
Secretary.

The stated meeting of the Philadelphia Branch of the American Pharmaceutical Association, on the evening of December 12, 1906, was devoted to a discussion of the Federal Pure Food and Drugs Law.

The session was presided over by Prof. Joseph P. Remington and was attended by upwards of 250 members and visitors.

"The Food and Drugs Act, June 30, 1906, and its Effect on the Composition of Medicines," by Dr. Harvey W. Wiley, was presented by Dr. Lyman F. Kebler, Chief of the Drug Laboratory of the Bureau of Chemistry, Washington, D. C. (p. 7).

Dr. Wiley, in this paper, refers to the existing laws regulating

the traffic in drugs, the standards that have been adopted, and also calls attention to some of the more interesting questions that have arisen in connection with the provisions of this act.

The paper also refers to the fact that, even under the provisions of this new law, the manufacturers of nostrums and the irregular practitioners of medicine, or quacks, are not materially interfered with and that the unspeakable abuses connected with the exploitation of secret remedies will continue practically unchanged. It appears that the best that may be expected from a conscientious enforcement of the Food and Drugs Act is a distinct improvement in the drugs used in the legitimate practice of medicine and a gradual elimination of false and misleading statements from the labels and some of the literature sent out with nostrums.

Mr. Mahlon N. Kline, of Philadelphia, in speaking of the "Practical Experience with the Federal Pure Food and Drugs Law," referred to some of the previous attempts at Federal legislation along the same lines, and incidentally called attention to some of the more irksome and apparently objectionable features of the present law. Despite the various shortcomings of the present act practically every reputable manufacturer and dealer will willingly submit to the extra work and expense involved, feeling that ultimately not alone the public but he himself will be well recompensed by the change.

Mr. Kline called attention to a number of questions that had arisen in connection with the law itself, and with the various provisions enumerated in the rules and regulations that have been adopted. He also cited a number of additional opinions that had been obtained from the Secretary of Agriculture and also from the Chief of the Bureau of Chemistry.

This paper was followed by an animated discussion, consisting mainly of a cross-fire of questions relating to minor details but illustrating that the average pharmacist is taking cognizance of what is going on, and that at least many of them are willing and even anxious to compel manufacturers and wholesale dealers to live up to and to comply with the several provisions of the Pure Food and Drugs Act.

Mr. Caswell A. Mayo, of New York, read a paper entitled "The Retailer and the Drugs Act," in which he called attention to the effect that the law will have on the public and more directly on the

business done by retail pharmacists. Many so-called patent medicines will be materially changed in appearance and also in composition, and the pharmacist will no doubt be expected to explain these changes.

A communication from Dr. Wm. Jay Schieffelin, of New York, bearing on some of the more intricate questions involved in the rules and regulations, was read and dicussed. Several additional communications that had been sent in, were, owing to a lack of time, referred to but not read in full.

Professor Remington referred to the recent death of Mr. Albert E. Ebert, of Chicago, a prominent member of the American Pharmaceutical Association, and suggested that a committee be appointed to draw up and to present to the Philadelphia Branch a suitable set of resolutions. It was moved and seconded that a committee of three be appointed by the Chair, to draft such resolutions and to solicit and accept contributions toward the monument fund inaugurated by the Chicago Veteran Druggists' Association.

The Chair appointed as members of this committee, Mr. William McIntyre, Mr. Edwin Boring and Mr. J. H. Redsecker.

Mr. Kline suggested that some expression of opinion in regard to the probable enactment of a State law, based on the Federal Pure Food and Drugs Law, might be opportune. After some additional discussion it was adopted as the sense of the meeting that a State drug law, based on the Food and Drugs Act, June 30, 1906, would be desirable. It was further proposed to appoint a committee of three members to confer with similar committees from other associations for the purpose of considering the advisability of such legislation and of bringing it in harmony with the essential provisions of the Federal law. This proposition was, on motion, adopted and the Chair appointed Messrs. Wm. L. Cliffe, Jos. W. England and M. I. Wilbert to serve as a committee from the Philadelphia Branch of the American Pharmaceutical Association, to confer with similar committees from other associations.

The Chair also announced that he had appointed the following members to serve as a committee on exhibitions, in addition to the executive committee of the local branch: Dr. H. C. Wood, Jr.; Mr. Frank E. Morgan, Mr. Henry C. Blair, Prof. Henry Kraemer and Prof. Charles H. LaWall.

M. I. WILBERT,
Secretary.

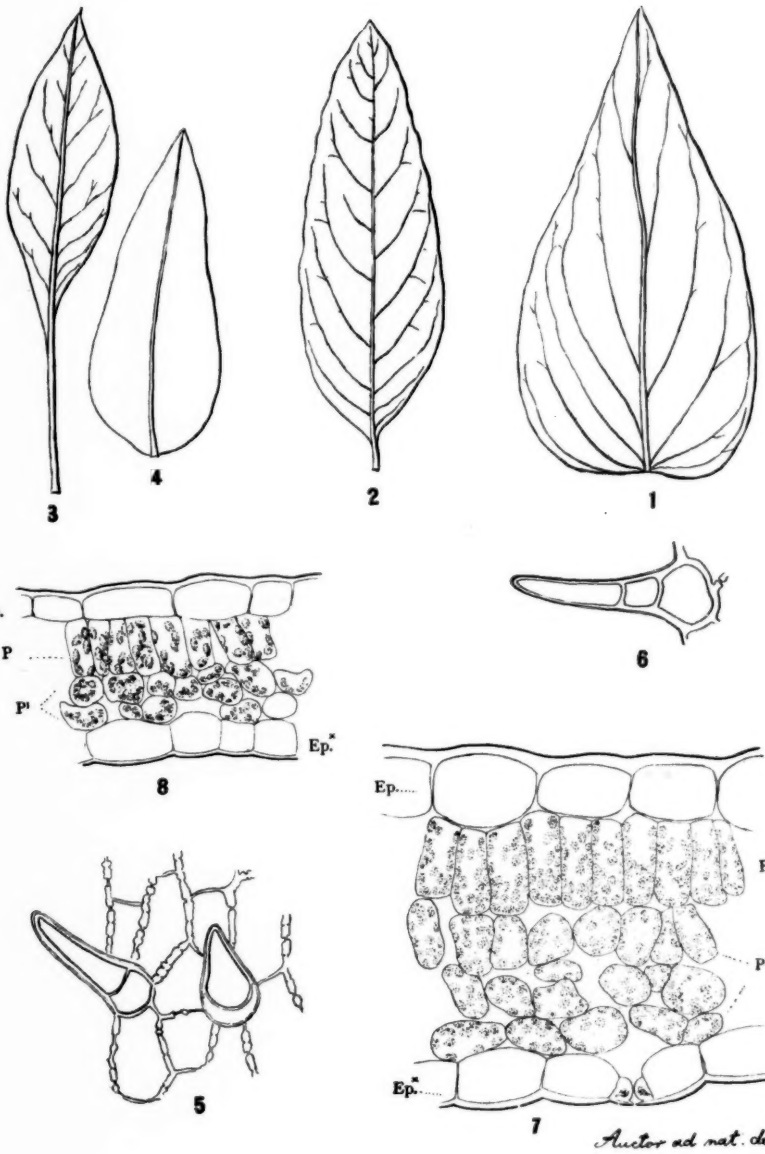

PLATE I.